<u>In the Claims:</u>

1. (currently amended) An ablation system, comprising:

generating means for generating ablation energy;

an ablation device comprising first ablation means connectable to the generating means and locatable adjacent a first tissue site to be ablated, for applying the generated ablation energy to the first tissue site;

a first impedance measuring electrode mounted to the ablation device so that the first impedance measuring electrode is adjacent the first tissue site when the first ablating means is adjacent the first tissue site;

impedance measurement circuitry connectable to the first impedance measuring electrode to measure impedance at the first tissue site, using the first impedance measuring electrode; and

control circuitry operably coupled to the generating means to initiate and terminate the application of ablating energy to the first ablating means, wherein the control circuitry is coupled to the impedance measurement circuit and terminates application of ablation energy to the first ablating means responsive to occurrence of an impedance plateau measured by the impedance measuring circuitry using the first impedance measuring electrode, following initiation of application of ablating energy to the first ablating means, <u>wherein the impedance plateau is defined as a maximum acceptable rate of change of impedance measurements over a defined period of time.</u>

2. (previously presented) A system as in claim 1 wherein the first ablating means is a first ablation electrode and wherein the generating means comprises an R-F generator.

3. (previously presented) A system as in claim 2 wherein the first ablation electrode is an irrigated ablation electrode.

4. (previously presented) A system as in claim 2 wherein the first ablation electrode is employed as the first impedance measuring electrode.

5. (cancelled) A system as in any of claims 1– 4 wherein the control circuitry comprises a processor programmed to define an impedance criterion defining a maximum acceptable degree

of change of impedance and to detect the impedance plateau responsive to a series of impedances measured by the impedance measurement circuit that have an acceptable degree of change.

6. (cancelled) A system as in claim 5, wherein the maximum acceptable degree of change comprises a maximum acceptable rate of change of impedances over the series of measured impedances.

7. (currently amended) A system as in any of claims 1 – 4, further comprising:

second ablation means and connectable to the generating means and mounted to the ablation device so that the second ablation means is locatable adjacent a second tissue site to be ablated while the first ablation means is located adjacent the first tissue site, for applying the generated ablation energy to the second tissue site;

a second impedance measuring electrode mounted to the ablation device so that the second impedance measuring electrode is adjacent the second tissue site when the second ablating means is adjacent the second tissue site; and

wherein the impedance measurement circuitry is connectable to the first impedance measuring electrode to measure impedance at the second tissue site, using the second impedance measuring electrode; and

control circuitry operably coupled to the generating means to initiate and terminate the application of ablating energy to the second ablating means, wherein the control circuitry is coupled to the impedance measurement circuitry and terminates application of ablation energy to the second ablating means responsive to occurrence of the impedance plateau measured by the impedance measuring circuitry using the second impedance measuring electrode, following initiation of application of ablating energy to the second ablating means.

8. (previously presented) A system as in claim 7 wherein the second ablating means is a second ablation electrode.

9. (previously presented) A system as in claim 8 wherein the second ablation electrode is an irrigated ablation electrode.

10. (previously presented) A system as in claim 8 wherein the second ablation electrode is employed as the second impedance measuring electrode.

11. (cancelled) A system as in claim 7 wherein the control circuitry comprises a processor programmed to define an impedance criterion defining a maximum acceptable degree of change of impedance and to detect the impedance plateau responsive to a series of impedances measured by the impedance measurement circuit that have an acceptable degree of change.

12. (cancelled) A system as in claim 11 wherein, wherein the maximum acceptable degree of change comprises a maximum acceptable rate of change of impedances over the series of measured impedances.

13. (previously presented) A system as in claim 7 wherein the first and second ablating means are simultaneously connectable to generating means wherein the control means is operable to simultaneously initiate application of ablating energy to the first and second ablating means.

14. (previously presented) A system as in claim 7 wherein the first and second ablating means are successively connectable to generating means wherein the control means is operable to initiate application of ablating energy to the second ablating means following termination of application of ablating energy to the first ablating means.

15. (currently amended) An ablation system, comprising:

a generator for generating ablation energy;

an ablation device comprising an ablation element connectable to the generator and locatable adjacent a tissue site to be ablated, for applying the generated ablation energy to the tissue site;

an impedance measurement electrode mounted to the ablation device so that the impedance measurement electrode is adjacent the tissue site when the ablation element is adjacent the tissue site;

impedance measurement circuitry connectable to the impedance measurement electrode to measure impedance at the tissue site, using the impedance measurement electrode; and

control circuitry operably coupled to the generator to initiate and terminate the application of ablating energy to the ablation element, wherein the control circuitry is coupled to the impedance measurement circuit and terminates application of ablation energy to the ablation element responsive to occurrence of an impedance plateau measured by the impedance measurement circuitry using the impedance measurement electrode, following initiation of application of ablating energy to the ablation element, <u>wherein the impedance plateau is defined as a maximum acceptable rate of change of impedance measurements over a defined period of time.</u>

16. (previously presented) A system as in claim 15 wherein the ablation element is an ablation electrode and wherein the generator is an R-F generator.

17. (previously presented) A system as in claim 16 wherein the ablation electrode is an irrigated ablation electrode.

18. (previously presented) A system as in claim 16 wherein the ablation electrode is employed as the impedance measurement electrode.

19. (cancelled) A system as in claim 15 wherein the control circuitry comprises a processor programmed to define an impedance criterion defining a maximum acceptable degree of change of impedance and to detect the impedance plateau responsive to a series of impedances measured by the impedance measurement circuit that have an acceptable degree of change.

20. (cancelled) A system as in claim 19 wherein the maximum acceptable degree of change comprises a maximum acceptable rate of change of impedances over the series of measured impedances.

21. (new) An ablation system according to claim 1 where the defined period of time is about 8 out of 12 impedance measurements.

22. (new) An ablation system according to claim 1 where the defined period of time is at least 6 out of 6 impedance measurements.